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TITLE:	ELONGATED VENTED GUN BARREL
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ELONGATED VENTED GUN BARREL

Background

One of the most significant drawbacks or problems associated with the use of a firearm for hunting purposes is the noise associated with the report of the firearm following discharge. Report is caused by the sudden release of high pressure gasses from a firearm barrel following discharge. The noise associated with the report of a firearm is generally present regardless as to whether black powder or cartridge type of ammunition is utilized. Hunters desire to minimize the report of a firearm to reduce the frightening and/or chasing away of game.

Presently, in many urban/suburban environments natural predators of game, fowl, or waterfowl have been displaced. The populations of game, fowl, and/or waterfowl within the urban/suburban environments have therefore, naturally, increased to a nuisance level. Efforts have been implemented to reintroduce natural predators to control the population of certain types of fowl. Firearms used to control populations of game, fowl, and/or waterfowl within suburban/urban environments have generally not been permitted primarily due to safety and noise issues. Periodic harvesting of game, fowl, and/or waterfowl within isolated parks may resolve safety issues leaving noise issues to be addressed. No conventional firearm is known which may be effectively used within an urban/suburban environment which minimizes the report and noise of the firearm upon discharge.

Federal and State regulations require that gasses vented from the barrel of a firearm following discharge be vented directly into the atmosphere. Silencers which vent gasses from the barrel into a chamber which in turn acts as a muffler are prohibited. Federal law also prohibits barrels of firearms to be less than a specified length to prevent use of the firearm as a concealed weapon. There exists no known Federal or State regulation limiting the maximum length of the barrel of a conventional type of firearm such as a shotgun or a rifle. An elongate gun barrel which includes vents for controller discharge of gasses to reduce report therefore appears to be permissible pursuant to Federal and State law.

General Description of the Invention

The elongated vented gun barrel may be used with a conventional firearm such as a shotgun or rifle. The elongated vented gun barrel generally has the length of at least three feet. The elongated vented gun barrel includes a breach end and a muzzle end. A plurality of vents are preferably disposed through the elongate barrel where the vents initiate approximately 12 inches from the breach end, extending and terminating proximate to the muzzle end. The vents preferably have a size which is less than one-half inch in diameter where the vents are constructed and arranged to minimize report of the firearm following discharge.

An advantage of the elongate vented gun barrel is to minimize report of a firearm following discharge.

Another advantage of the elongated vented gun barrel is to comply with Federal and State regulations prohibiting the use of silencers.

Still another advantage of the elongated vented gun barrel is the controlled release of high pressure gasses more slowly to significantly reduce the sharpness of the report of a firearm.

Still another advantage of the elongated vented gun barrel is the flexibility for use with conventional shotguns and/or rifles.

Still another advantage of the elongated vented gun barrel is the gradual and controlled venting of high pressure gasses to minimize firearm report.

Still another advantage of the elongated vented gun barrel is to reduce recoil following discharge of a firearm.

Still another advantage of the elongated vented gun barrel is to improve accuracy related to aiming of projectiles discharged by a firearm.

Still another advantage of the elongated vented gun barrel is the provision of a barrel formed of light weight, sturdy, and/or flexible materials which does not fracture and/or fail during discharge of a firearm.

Still another advantage of the elongated vented gun barrel is the provision of a gun barrel formed of relatively simple and inexpensive design, construction, and operation which fulfills the intended purpose of reducing report of a firearm during discharge without risk of injury to individuals and/or damage to property.

Brief Description of the Drawings:

Figure 1 is a side view of the elongated vented gun barrel and firearm.

Figure 2 is a detail side view of the elongated vented gun barrel.

Figure 3 is a detail side view of the firearm and breach end of the elongated vented gun barrel.

Detailed Description of the Preferred Embodiment:

One form of the elongated vented gun barrel is illustrated and described herein. In general, the elongated vented gun barrel is referred to by the numeral 10.

The elongated vented gun barrel 10 is preferably integrally connected to a conventional firearm 12 which may be a rifle and/or shotgun. The elongated vented gun barrel 10 preferably includes a breach end 14 and a muzzle end 16. The breach end 14 is preferably positioned proximate to the trigger 18 and/or stock 20 of the firearm 12. The breach end 14 of the elongated vented gun barrel 10 is preferably constructed and arranged for releasable attachment to the stock 20 and/or muzzle of a firearm 12 through conventional means.

The overall length of the elongated vented gun barrel 10 between the breach end 14 and the muzzle end 16 preferably extends for a distance greater than 36 inches and/or 91.44 centimeters. The overall length of the elongated vented gun barrel 10 is preferably less than 12 feet and/or 3.6576 meters.

The elongated vented gun barrel 10 is preferably formed of conventional metal materials which may have a blued surface treatment and/or camouflage patterns at the preference of an individual. Alternatively, the elongated vented gun barrel 10 may be formed of light weight metals and/or materials such as aluminum, plastic, fiberglass, and/or other materials at the discretion of an individual. In the preferred embodiment it is anticipated that the elongated vented gun barrel 10 will be formed of traditional metal materials for a distance of approximately 18 inches or 45.72 centimeters extending from the breach end 14 towards the muzzle end 16. The use of light weight metals and/or other materials such as aluminum, plastic, and/or fiberglass are anticipated to be utilized

to form the elongated vented gun barrel 10 beyond 18 inches or 45.72 centimeters extending from the breach end 14.

The elongated vented gun barrel 10 may be formed of one or more barrel sections 22. Each of the barrel sections 22 may be releasable coupled to each other at connection points 24 through the use of penetrating and receiving threaded connections 26 and/or fasteners 28. It should be noted that other affixation mechanisms may be utilized to affix adjacent barrel sections 22 together at connection points 24. The types of fasteners utilized to affix adjacent barrel sections 22 together are preferably of sufficient strength and durability to not separate during use and discharge of a firearm 12.

Alternatively, the elongated vented gun barrel 10 may be formed of one or more fixedly secured adjacent barrel sections 22. Adjacent barrel sections 22 in this embodiment may be secured together at connection points through utilization of permanent affixation mechanisms such as welds. Alternative permanent affixation mechanisms may alternatively be utilized to attach adjacent barrel sections 22 together.

The barrel sections 22 utilized to form the elongated vented gun barrel 10 may each include a uniform length dimension. Alternatively, the barrel sections 22 forming the elongated vented gun barrel 10 may have different length dimensions. It should be noted that each of the barrel sections 22 preferably has a uniform diameter dimension. Alternatively, one or more of the adjacent barrel sections 22 may be formed of a smaller diameter to function in a manner similar to a choke for a conventional shotgun to restrict and slow the expulsion of a shotshell wad, thereby forcing more gasses through the gun barrel. It is anticipated that a smaller diameter for a barrel section 22 may be utilized beyond 36 inches or 91.44 centimeters from the breach end 14.

In the preferred embodiment the elongated vented gun barrel 10 preferably has a length dimension of approximately seven feet or 2.1336 meters.

The utilization of adjacent barrel sections 22 preferably facilitates the disassembly of the elongated vented gun barrel 10 during periods of non-use for convenient transportation of the firearm 12 to and from a hunting location.

The elongated vented gun barrel 10 when used in connection with a shotgun is preferably adapted for confinement of discharged shot from 2¾ inch or 6.985 centimeter, 3 inch or 7.62 centimeter, or 3½ inch or 8.89 centimeter shotgun shells.

One or more vents or ports 30 preferably traverse the elongate vented gun barrel 10 to facilitate the controlled expulsion of high-pressure gasses which occur following the discharge of the firearm 12. The vents or ports 30 are preferably positioned along the length of the elongate vented gun barrel 10 initiating beyond twelve inches or 30.48 centimeters from the breach end 14 and terminating proximate to the muzzle end 16. Each of the vents 30 preferably has a size dimension of less than ½ inch or 1.27 centimeters in diameter or smaller. The positioning of the vents 30 along the length of the elongated vented gun barrel 10 preferably minimize report of the firearm 12 following discharge.

The vents or ports 30 as positioned along the length of the vented gun barrel 10 may be of identical size. Alternatively, a plurality of varying sized vents 30 may be disposed through the elongated vented gun barrel 10 for control of the discharge of high pressure gasses caused by the discharge of the firearm 12.

Each of the vents 30 preferably has a diameter size less that ½ inch or 1.27 centimeters. The number of vents 30 disposed through the elongated vented gun barrel 10 preferably do not adversely effect the structural strength of the gun barrel 10 during use.

The vents 30 may be grouped into at least one sector 32 along the length of the elongated vented gun barrel 10. The vents 30 as disposed within each sector 32 may be regularly spaced from adjacent vents 30. Alternatively, the vents 30 disposed within each sector 32 may be irregularly spaced from adjacent vents 30 to facilitate a desired rate of discharge of high pressure gasses following discharge of a firearm 12. It should be noted that any number of sectors 32 may be disposed along the length of the elongated vented gun barrel 10.

The vents 30 as disposed within each sector 32 may be of the same or different sizes to facilitate the expulsion of high pressure gasses which occur upon discharge of the firearm 12. The one or more sectors 32 located along the elongate vented gun barrel 10 may have identical or different length dimensions to facilitate the provision of a desired combination or pattern of vents 30 to expel high pressure gasses occurring upon the discharge of the firearm 12.

The vents 30 as disposed within each sector 32 may be aligned in a

pattern of straight lines, offset lines, random spacing, and/or spiral configuration to facilitate a desired controlled expulsion of high pressure gasses from the elongated vented gun barrel 10. Different or identical patterns of vents 30 may also be disposed within adjacent sectors 32.

The use of the elongated vented gun barrel reduces the noise of conventional ammunition with velocities above the speed of sound. However, the use of subsonic ammunition utilizing fast burning powders which create a minimum volume of gas work synergistically with the elongated vented gun barrel to produce a low report. Subsonic ammunition does not create the shock wave generated by supersonic ammunition. In addition, a lower volume of gas produced by a smaller charge of fast burning powder is more quickly vented through the gun barrel vents 30 than a large volume of gas produced by a large charge of slow burning powder.

A synergistic relationship exists between a firearm 12 including an elongated vented gun barrel 10 and traditional and/or subsonic ammunition. The performance of the elongated vented gun barrel 10 is reduced when high velocity ammunition is utilized by an individual. The use of the elongated vented gun barrel 10 with traditional and/or subsonic ammunition minimizes report and recoil, and further improves the accuracy of aim during use of a firearm 12.

The use of the elongated vented gun barrel 10 enables the gradual release of high pressure gasses through the vents 30 to reduce report and sound pressure intensity emanating from the muzzle 16 by the time a projectile reaches the muzzle 16 following discharge of the ammunition. An increase in the length dimension of the elongated vented gun barrel 10 in turn, provides more space to strategically place vents 30, and more time to slowly release gas pressure in the barrel to minimize report. A balance between length of the elongated vented gun barrel 10 and weight of a firearm is required to provide a barrel having a sufficient length to obtain a desired level of report reduction simultaneously with the provision of an acceptable weight. An elongated vented gun barrel 10 having the length of approximately seven feet or 2.1336 meters provides a satisfactory balance to the weight and report reduction factors.

The elongated vented gun barrel 10 improves safety to individuals in that increased length of the firearm 12 escalates the difficulty in accidentally pointing the

elongated vented gun barrel 10 at an individual. Risk of accidental shootings is thereby minimized. The use of the elongated vented gun barrel 10 in addition, enhances the visibility of the firearm 12 eliminating concealed weapon concerns. Also, the use of the elongated vented gun barrel 10 by hunters facilitates observation by individuals within a hunting party and the respective location of the hunters relative to one another during hunting activities. The safety to the hunters is thereby enhanced.

It is anticipated that the elongated vented gun barrel 10 may be used in any type of hunting activities and will be extremely useful in controlled urban/suburban environments by municipalities and/or game control entities to assist a community in regulating the population of wildlife, fowl, and/or waterfowl, which have become a nuisance.

The above Examples and disclosure are intended to be illustrative and not exhaustive. These examples and description will suggest many variations and alternatives to one of ordinary skill in this art. All these alternatives and variations are intended to be included within the scope of the attached claims. Those familiar with the art may recognize other equivalents to the specific embodiments described herein which equivalents are also intended to be encompassed by the claims attached hereto.

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